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10/005,298	12/05/2001	Weitao Jia	JPP-1266NP	8824

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EXAMINER

YOON, TAE H

ART UNIT PAPER NUMBER

1714

DATE MAILED: 09/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/005,298

Applicant(s)

JIA ET AL.

Examiner

Tae H Yoon

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 30-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 8-29 is/are rejected.
- 7) ☒ Claim(s) 2-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

Art Unit: 1714

## DETAILED ACTION

### *Election/Restriction*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-29, drawn to a polymerizable dental composition and product thereof, classified in class 523, subclass 115+.
- II. Claims 30-40, drawn to a a method of forming a dental or medical restoration, classified in class 524 and 424, subclass 115+ and 422+.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product can be used in materially different process such as bone restoration as well as tooth restoration as evidenced by the claim 30 itself, and since the composition can be used in making implants as evidenced by US Pat. 5,837,752 and 6,051,247 (col. 2, lines 59-60) or dentures.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

Art Unit: 1714

During a telephone conversation with Ms. Knab on September 11, 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-29. Affirmation of this election must be made by applicant in replying to this Office action. Claims 30-40 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Submission of a separate claim with a narrower limitation (such as ----) recited in claim 26 is suggested.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1714

The recited "non-hydroxylated resins and alkylated hydroxyl-containing resins" in claim 11.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1714

Claims 1, 8-10, 13-20, 22, 23, 25, 26 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shastri et al (US 5,837,752).

Shastri et al teach compositions dental applications in abstract and at col. 9, lines 10-19. Mehtacrylate functional biodegradable macromonomers (col. 5, lines 26-46 and col. 6, lines 26-34), reactive diluent monomer, tricalcium phosphate, hydroxyapatite and medicaments (col. 6, lines 35-61), and photo- and thermal-initiators (col. 9 lines 61-67, col. 10, lines 26-27 and col. 11, lines 11-22) are also taught. Contrasting agents are taught at col. 7, lines 23-45. Said hydroxyapatite meets the instant bioactive fillers as well as a high refractive index filler.

Thus, the instant invention lacks novelty.

Claims 1, 8-10, 13-20, 22, 23, 25 and 27-29 are rejected under 35 U.S.C. 103(a) as obvious over Shastri et al (US 5,837,752) in view of Hench et al (US 6,051,247) or Anderson et al (The Kinetics of Bioactive Ceramics, 1990, ISCM, pp. 46-end of article).

The instant invention further recites particular components for the bioactive glass over Shastri et al. However, such bioactive glass is well known as taught by Hench et al (table at col. 4 and table 1) and Anderson et al (table 2 at page 47).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize the bioactive glass taught by Hench et al or Anderson et al in Shastri et al since Shastri et al teach bioactive fillers and since such fillers are well known.

Art Unit: 1714

Claims 1, 8-20, 22-26 and 29 are rejected under 35 U.S.C. 103(a) as obvious over Shastri et al (US 5,837,752) in view of Hasegawa et al (US 5,380,772) or Kliment et al (US 3,925,895).

The instant invention further recites particular reactive diluent monomers such as dimethacrylate, barium sulfate and a mixture of fillers over Shastri et al. However, Shastri et al teach employing a reactive diluent monomer and various fillers. Hasegawa et al teach various dimethacrylates and Kliment et al teach the use of a mixture of fillers including a radiopaque barium sulfate.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize a dimethacrylate taught by Hasegawa et al in Shastri et al as a reactive diluent monomer in combination with a methacrylate functional biodegradable macromonomer since Shastri et al teach employing multiple reactive monomers and macromers and since it is well known in the art that dimethacrylate monomers provide improved physical properties due to crosslinking, or further to utilize a mixture of fillers taught by Kliment et al in combination of tricalcium phosphate taught by Shastri et al since the use of mixed fillers including barium sulfate in dental composition is a routine practice.

Claims 1, 8, 9, 13-21, 27 and 28 are rejected under 35 U.S.C. 103(a) as obvious over Sawhney et al (US 5,900,245) in view of Hench et al (US 6,051,247) or Shastri et al (US 5,837,752) and/or Anderson et al (The Kinetics of Bioactive Ceramics, 1990, ISCM, pp. 46-end of article)

Art Unit: 1714

Sawhney et al teach tissue sealants comprising acrylate functional biodegradable macromonomers (col. 7, lines 61-65, col. 8, lines 16-43 and col. 9, lines 27-61) and curing agents (col 10, lines 17-65). The use of comonomers such as any of the samller acrylate is taught at col. 11, line 33. Sawhney et al also teach employing biologically acitve inorganic compounds at col. 12, lines 36 and 46.

The instant invention further recites particular bioactive fillers over Sawhney et al. However, the instant bioactive fillers are well known in the art as taught by Hench et al (abstract and table 1), Shastri et al (col. 6, lines 41-48) and Anderson et al (table 2 at page 47).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize the art well known bioactive fillers of Hench et al or Shastri et al and/or Anderson et al in Sawhney et al since Sawhney et al teach employing biologically acitve inorganic compounds.

Claims 2-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tae H. Yoon whose telephone number is (703) 308-2389. The examiner can normally be reached on Monday to Thursday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,



Application/Control Number: 10/005,298

Page 8

Art Unit: 1714

Vasu Jagannathan, can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

THY/September 11, 2003



TAE H. YOON  
PRIMARY EXAMINER